patients. A typical PCU admits patients in the final phase of life. A high quality of care by a multi disciplinary team (including nurses, physicians, psychologists, music therapy, physiotherapy and others) results in substantial costs (recent survey in German PCUs: on average ~€400/day). The average length of stay is in the range of 11–15 days, the proportion of discharged patients varies between 40–70%, for the remaining patients the admission ends not unexpectedly with the death of the patients. The gain in utility close to death is difficult to estimate, but even high assumptions (e.g. 0,5) result in costs for QALYs, which are unexpectedly high. Scenario 1: 14, 0.5, 30, 0.5, 400, 192455 €; scenario 2: 14, 0.7,30, 0.5, 400, 172545 €; scenario 3: 14, 0.5, 30, 0.3, 400, 320758 €; scenario 4: 10, 0.5, 30, 0.5, 400, 182500 € for length of stay (d), proportion surviving, survival after discharge (d), gain in utility, cost/day, resulting cost / QALY. People experiencing the sheer necessity of palliative care for a death with dignity may use these data as an argument against the QALY concept. Only by including longterm changes e.g. in the utility gain experienced by relatives (small gains over a long period in several persons, e.g. by avoiding pathological grief) the model results in costs/QALY which seem acceptable.

CN6

TREATMENT-RELATED TOXICITIES IN PATIENTS WITH SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK (SCCHN)

Yood MU[1], Wang F[2], Zhao Z[2], Alford SH[3], Oliveria S[1], Wells K[3], Phillips S[4], Ali H[3], O'Malley C[5], Barber B[6]

[1]Epi Source, hamden, CT, USA, [2]Amgen Inc, Thousand Oaks, CA, USA, [3]Henry Ford Health System, Detroit, MI, USA, [4]Epi Source, Hamden, CT, USA, [5]Amgen, Inc, Thousand Oaks, CA, USA, [6]Amgen Inc., Thousand Oaks, CA, USA

OBJECTIVES: To evaluate treatment-related toxicities among patients with squamous cell carcinoma of the head and neck (SCCHN) treated in real-world clinical practices. **METHODS:** We used a population-based tumor registry at a large, US health system, to identify all cases of stage III or IV SCCHN diagnosed from 2000 to 2006. We identified the incidence/severity of acute and late toxicities associated with SCCHN treatment from detailed medical record reviews. Acute and late toxicities were evaluated using CTCAE3 criteria and RTOG/EORTC late radiation morbidity scoring scheme, respectively. The incidence and severity of toxicities are presented by treatments. Detailed analyses according to tumor stage and location, grade, and acute versus late events were examined. **RESULTS:** We identified 195 patients with SCCHN: A total of 104 patients (53%) received chemotherapy (chemo) + radiation therapy (RT); 87 (45%) received RT only; four patients (2%) received chemotherapy only or other/no treatment. Adverse Events of Interest (grade 2–4) by Treatment Received (N = 191*): Gastrointestinal: 160 (83.8), 89 (85.6), 71 (81.6); Xerostomia: 61 (31.9), 41 (39.4), 20 (23.0); Dysphagia: 70 (36.6), 44 (42.3), 26 (29.9); Dermatology: 91 (47.6), 54 (51.9), 37 (42.5); Pulmonary: 74 (38.79), 41 (39.4), 33 (37.9); Aspiration pneumonia: 62 (32.5), 37 (35.6), 25 (28.7); Dehydration: 43 (22.5), 29 (27.9), 14 (16.1); Subcutaneous tissue: 30 (15.7), 18 (17.3), 12 (13.8); Infection: 29 (15.2), 21 (20.2), 8 (9.2); Renal/Genitourinary: 19 (9.9), 14 (13.5), 5 (5.7); Auditory: 16 (8.4), 12 (11.5), 4 (4.6); Bone: 4 (2.1), 3 (2.9), 1 (1.1) for Total n = 191 n(%), Chemo+RT n = 104 n(%), RT only n = 87 n(%). Note: Four patients received chemotherapy only or other/no treatment. **CONCLUSIONS:** Treatment-related toxicity in patients with advanced SCCHN is common. The addition of chemotherapy to radiation is associated with increased risk treatment-related toxicities. These data provide real-world incidence rates of toxicity as observed in clinical practice.

CN7

TREATMENT VARIATION COMPLICATES REAL-WORLD PHARMACOECONOMICS: DAILY CLINICAL PRACTICE OF BORTEZOMIB IN RELAPSED OR REFRACTORY MULTIPLE MYELOMA

Franken M[1], Gaultney J[1], Huijgens P[2], Redekop WK[1], Uyl-de Groot CA[1]

[1]Erasmus University Medical Center, Rotterdam, The Netherlands, [2]VU University Medical Center, Amsterdam, The Netherlands

OBJECTIVES: The Dutch policy measure on expensive inpatient medicines aims to ensure accessibility by relieving financial burden of hospitals. After three years, outcomes research influences decision-making on the continuation of additional funding. We explored the consequences of daily clinical practice variation for real-world pharmacoeconomics of bortezomib in relapsed or refractory multiple myeloma. **METHODS:** Our study included 139 multiple myeloma patients who progressed from first line therapy and received bortezomib outside of an RCT. Detailed case reports were retrospectively collected from medical records in 38% of all Dutch hospitals. Treatment variation and combinations of bortezomib were explored until sixth line therapy. **RESULTS:** All patients had at least two treatment lines, 66% received third line, 41% fourth line, 14% fifth line and 6% sixth line therapy. At least nine chemical agents were given in all lines as mono-therapy or in different combinations. No specific treatment order could be identified because of large variation in regimes and drug usage in different and reversed order. Moreover, guidelines have changed over the years and recommend earlier use of bortezomib; and lenalidomide, another very effective medicine, was increasingly used. In total, 72 patients received bortezomib, 30% as mono-therapy and 70% as combination therapy. Bortezomib was most often combined with dexamethasone (60%), but combinations with five other drugs were seen. Clinical guidelines state that differences in patient circumstances require professional discretion; this results in extensive variability in daily practice. **CONCLUSIONS:** Compared to an RCT, outcomes research of bortezomib is complicated by extensive treatment variation in daily clinical practice. This suggests that a standard pharmacoeconomic model comparing two treatment arms is not sufficient. Comprehensive modelling using different data sources is required to acquire a valid and precise (cost-) effectiveness measure of bortezomib in daily clinical practice.

CN8

METHODOLOGICAL ISSUES OF CONTROL ARM ADJUSTMENTS FOR COMPARATIVE EFFECTIVENESS ASSESSMENTS: AN EXAMPLE BASED ON THE COMPARISON OF FIRST-LINE BEVACIZUMAB + INTERFERON ALPHA-2A VS SUNITINIB IN RENAL CELL CARCINOMA

Schwander B[1], Mickisch GH[2], Walzer S[3], Siebert U[4]

[1]AiM GmbH Assessment in Medicine, Schopfheim, Germany, [2]Center of Operative Urology Bremen, Bremen, Germany, [3]F. Hoffmann-La Roche Pharmaceuticals AG, Basel, Switzerland, [4]UMIT—University for Health Sciences, Medical Informatics and Technology, Hall i.T, Austria

OBJECTIVES: Comparative effectiveness assessments require standardization of clinical trial control arms to enable valid indirect comparisons. In order to inform guidelines on such adjustments, we provide insights on the Interferon-alpha-2a (IFN-α) control arm adjustment performed for comparing bevacizumab (BEV) + Interferon-alpha-2a (IFN-α) vs. sunitinib (SUN) in first-line metastatic renal-cell cancer. **METHODS:** Adjustments were based on hazard ratios (HR) and median progression-free survival (PFS) time. Based on published phase-III trial investigator-assessed PFS (SUN vs. IFN-α HR 0.519; SUN PFS 10.8 months [m]; IFN-α 4.1m; BEV+IFN-α vs. IFN-α HR 0.630; BEV PFS 10.2 m; IFN-α 5.4 m), indirect HRs were recalculated by adjusting IFN-α arms applying two scenarios: 1. IFN-α PFS of BEV = SUN IFN-α PFS (4.1 m); 2. IFN-α PFS of SUN = BEV IFN-α PFS (5.4 m). Applying the cross-trial proportions of indirect HRs to direct HRs, the recalculated indirect HRs have been transferred to direct HR estimates (cross-trial rule of proportion approach). This approach was tested by adjusting the BEV trial IFN-α curve and recalculating the direct HR based on a Weibull model, applied to original phase III data. **RESULTS:** In scenario 1, the HR of SUN vs. IFN-α increased to 0.595; in scenario 2 the HR of BEV+IFN-α decreased to 0.550. Indirect comparison results of SUN vs. BEV+IFN-α where comparable for both scenarios (HR SUN vs. BEV+IFN-α = 0.945; CIs: 0.73–1.22; p-value = 0.66). Testing scenario 2 based on a Weibull-function resulted in HR of BEV + IFN-α of 0.517. Applying an updated approach replicating the analysis results for scenario 2 resulted in an indirect comparison HR of SUN vs. BEV+IFN-α of 1.010 (CIs: 0.79–1.30; p = 0.94). **CONCLUSIONS:** As original trial data are often not accessible, using indirect HRs and adjusting them according to the method presented seems to be a practicable approach that could be performed based on published data.

PODIUM SESSION II: ECONOMIC EVALUATION AND REIMBURSEMENT DECISIONS I

EE1

USING IQWIG'S EFFICIENCY FRONTIER APPROACH FOR THE ECONOMIC EVALUATION OF HEAPTITIS C TREATMENT—A PILOT AND FEASIBILITY STUDY COMMISSIONED BY IQWIG

Siebert U, Mühlberger N, Conrads-Frank A, Sroczynski G, Schwarzer R

UMIT—University for Health Sciences, Hall, Austria

OBJECTIVES: The German HTA agency IQWiG published new guidelines on health-economic evaluations for the statutory health care system. The goals of this pilot study commissioned by IQWiG were: 1) to apply the efficiency frontier (EF) approach to evaluate the cost-effectiveness of combination therapy with peginterferon plus ribavirin (PegIFN + RBV) in patients with chronic hepatitis C (CHC); and 2) to assess the feasibility of the EF approach in this case example. **METHODS:** IQWiG's EF approach assesses the cost-effectiveness of the new treatment (i.e., PegIFN + RBV) within the specific disease area (i.e., CHC) by comparing the new treatment's incremental cost-effectiveness ratio (ICER) to ICERs of established treatments. We used a lifetime Markov model to determine health outcomes and costs of all treatment options. Health outcomes included sustained virological response (SVR), lifetime risk of decompensated cirrhosis and quality-adjusted life years (QALY). Model parameters were derived from the published literature and German databases. We adopted the perspective of citizens insured through the statutory health insurance. We performed a budget impact analysis reporting annual incremental costs. **RESULTS:** The ICERs of PegIFN + RBV compared to interferon plus ribavirin (IFN + RBV) were EUR 15,000 EUR/SVR avoided, EUR 42,000/decompensated cirrhosis avoided, and EUR 4,000/QALY. These ICERs are substantially lower than those of the last segments of the respective EFs (i.e., ICER of IFN + RBV vs. IFN monotherapy) indicating cost-effectiveness of PegIFN + RBV. The expected incremental annual budget ranged between 15 and 134 million EUR. The introduction of new genotype-specific treatment guidelines led to cost-savings when compared to IFN + RBV. **CONCLUSIONS:** PegIFN + RBV should be cost-effective compared to other established treatments in CHC. The EF approach should be feasible for HTAs in the CHC area. However, several issues remain to be solved and the conclusions derived from HTAs based on IQWiG's framework may substantially differ from HTAs assuming uniform willingness-to-pay thresholds across the entire health care system.

EE2

DEAR POLICYMAKER: HAVE YOU MADE UP YOUR MIND?

Koopmanschap M[1], Stolk E[2], Koolman XH[3]

[1]Erasmus MC, Rotterdam, The Netherlands, [2]Erasmus Medical Center, Rotterdam, The Netherlands, [3]Delft University of Technology, Delft, The Netherlands

OBJECTIVES: To get insight in what criteria as presented in HTA studies are important for decision makers in health care priority setting. **METHODS:** We performed a